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Notes:
1. Untranslatable words are replaced with asterisks (****).
2. Texts in the figures are not translated and shown as it is.

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CLAIMS

[Claim(s)]

[Claim 1] Warm air feed unit (8) Tableware storage room (2) Send in warm air and this is heated. This tableware storage room (2) It is the tableware dryness method in the dish washer which performs dryness operation while discharging inner humid air outside. tableware storage room (2) Temperature sensor (S) which detects temperature until detection temperature turns into dryness cooking temperature -- tableware storage room (2) Temperature up process (L) to which temperature up of the inside is carried out It performs after this and is the above-mentioned temperature sensor (S). Temperature maintenance process (N) which maintains detection temperature at the above-mentioned dryness cooking temperature while carrying out sequential execution The above-mentioned temperature up process (L) When the dryness accumulation time measured from the time of a start turns into a dryness setup time defined beforehand, it is a temperature maintenance process (N). It is made to make it end. Furthermore, when making dryness operation interrupt and resume, it is discontinuation / resumption signal generator to a warm air feed unit (8). In the tableware dryness method to which made it make the signal receive and this is made ON-OFF [a signal] output Temperature up process (L) When a discontinuation signal is outputted from discontinuation / resumption signal generator during execution, it is a temperature sensor (S). [judge detection temperature, and] when this detection temperature is lower than the reference temperature set below to dryness cooking temperature The tableware dryness method in the dish washer which remeasured dryness accumulation time anew since discontinuation / resumption signal generator outputted the resumption signal of dryness.

[Claim 2] Warm air feed unit (8) Tableware storage room (2) Send in warm air and this is heated. This tableware storage room (2) It is the tableware dryness method in the dish washer which performs dryness operation while discharging inner humid air outside. tableware storage room (2) Temperature sensor (S) which detects temperature until detection temperature turns into dryness cooking temperature -- tableware storage room (2) Temperature up process (L) to which temperature up of the inside is carried out It performs after this and is the above-mentioned temperature sensor (S). Temperature maintenance process (N) which maintains detection temperature at the above-mentioned dryness cooking temperature while carrying out sequential execution The above-mentioned temperature up process (L) When the dryness accumulation time measured from the time of a start turns into a dryness setup time defined beforehand, it is a temperature maintenance process (N). It is made to make it end. Furthermore, when making dryness operation interrupt and resume, it is discontinuation / resumption signal generator to a warm air feed unit (8). In the tableware dryness method to which made it make the signal receive and this is made ON-OFF [a signal] output Temperature maintenance process (N) When a discontinuation signal is outputted from discontinuation / resumption signal generator during execution, it supervises that the resumption signal of dryness is outputted from ~~this~~ discontinuation / resumption signal generator and this resumption signal of dryness occurs, it is a temperature sensor (S). It supervises that detection temperature carries out temperature up more than reference temperature. When the add time of dryness accumulation time until dryness accumulation time and the above-mentioned discontinuation signal after this temperature becomes more than reference temperature are outputted is in agreement at a dryness setup time, it is a temperature maintenance process (N). The tableware dryness method in the dish washer it was made to terminate.

[Claim 3] Temperature up process (L) When a discontinuation signal is outputted from discontinuation / resumption signal generator during execution, it is a temperature sensor (S). Detection temperature is judged. It is the tableware dryness method in the dish washer according to claim 2 which remeasured dryness accumulation time anew since discontinuation / resumption signal generator outputted the resumption signal of dryness when this detection temperature was lower than the reference temperature set below to dryness cooking temperature.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the tableware dryness method in a dish washer etc., and even when dryness operation is interrupted temporarily, it may be made to make it dry food utensils proper.

[0002]

[Description of the Prior Art] With the dish washer shown in drawing 1 , it is a casing (1). Tableware storage room (2) formed inside Nozzle arm (6) which possesses many nozzles (60) and (60) inside It is prepared and is the above-mentioned tableware storage room (2). A front opening part (29) is an opening-and-closing door (3). It is opened and closed. Tableware storage room (2) While the water tank for rinse water storage (23) is formed in the bottom, in this water tank (23), a water heating heater (20) and (20) are arranged.

[0003] moreover, casing (1) Air supply opening (830) formed in the upper part of the front from -- while the air supply way (83) connected with the warm air blow-off mouth (81) of the back wall (27) of a tableware storage room (2) is prepared Warm air feed unit (8) which changes from the heater for dryness (84), and a fan (80) to this air supply way (83) It is arranged. in order [furthermore,] to discharge the humid air at the time of tableware dryness outside -- the ceiling hole (51) of a tableware storage room (2) to casing (1) Exhaust air way (5) connected with the exhaust port (52) of a front wall It is prepared. Moreover, tableware storage room (2) In the side of a front opening part (29), it is an opening-and-closing door (3). Door detection switch (K) which detects opening and closing While being prepared, it is this tableware storage room (2) further. Temperature sensor (S) which detects ambient temperature in the Amai part (2b) of an inner It is prepared.

[0004] When the driving switch which is not illustrated is operated in this thing, the rinse water in the water tank (23) which was able to be warmed with the water heating heater (20) is a water flow way (F). Pump (P) while being drawn in This is a nozzle arm (6). A nozzle (60) and (60) to food utensils (M) (M) It is sprayed and they are these food utensils (M). (M) It is washed. And after this washing operation is completed, they are the above-mentioned food utensils (M). (M) Warm air feed unit (8) after rinse operation was performed suitably It is made to operate and they are food utensils (M). (M) Dryness operation can begin. Namely, temperature sensor (S) by controlling the heater for dryness (84) with a fan (80), supervising an output Tableware storage room (2) Temperature up process (L) (refer to drawing 6) to which temperature up of the inside is carried out Temperature maintenance process (N) of maintaining this temperature to dryness cooking temperature (for example, 60 degrees C) It is made to start. And tableware storage room (2) Inner humid air is a tableware storage room (2). A ceiling hole (51) to exhaust air way (5) When only the dryness setup time when it passed at, and was discharged outside at and this dryness operation was defined beforehand is performed, it is a warm air feed unit (8). It is stopped. That is, dryness operation is completed. Moreover, it is an opening-and-closing door (3) during the above-mentioned instrument operation. When opened wide compulsorily, it is a door detection switch (K) about this. It detects, the above-mentioned washing operation and dryness operation carry out forcible discontinuation, and it is a tableware storage room (2). New food utensils (M) It can put in or some accommodated tableware can be taken out.

[0005] However, when dryness operation is interrupted for the conventional dish washer temporarily, even if it continues dryness operation after this discontinuation, they are food utensils (M). (M) There is a problem of the ability not to make it fully dry. The above-mentioned problem is explained further in full detail. If the dryness accumulation time which was not concerned with discontinuation **** and no temporarily, but measured dryness operation from the time of the start of dryness operation is in agreement at a predetermined dryness setup time, he is trying to terminate dryness operation uniformly in the conventional dish washer.

[0006] Therefore, dryness operation which has already started is interrupted and it is a tableware storage room (2). Inner food utensils (M) That it should be used [take a part of this out or] Moreover, this tableware storage room (2) Food utensils (M) new inside (M) When the work to put in is done, they are food utensils (M). (M) The time by which drying by heating is carried out changes short only the above-mentioned discontinuation time. therefore, opening-and-closing door (3) even if it closes and makes dryness operation resume -- the above -- the part to which actual drying time became short -- food utensils (M) The shortage of dryness arises. Moreover, the above-mentioned opening-and-closing door (3) It is a tableware storage room (2) by opening. Since inner heat escapes outside, heat loss produces only that part, and they are food utensils (M) also from this point. (M) It becomes impossible to make it fully dry.

[0007] In addition, at the above-mentioned thing, it is an opening-and-closing door (3). Door detection switch [ON-OFF / switch / is interlocked with opening and closing and] (K) although instrument operation is interrupted by signal or he is trying to make this resume By forming the independent switch which carries out manual operation, what was made to operate about above-mentioned discontinuation and resumption may be used. Moreover, although the dish washer of form of performing tableware dryness after tableware washing was illustrated and the above-mentioned problem was pointed out in the above-mentioned thing, it cannot be overemphasized that the same problem as the ****** above is in the tableware drier which performs only tableware dryness operation.

[0008] This invention was made in view of the above-mentioned point, sends warm air into a tableware storage room (2) with "warm air feed unit (8), and heats this. This tableware storage room (2) It is the tableware dryness method in the dish washer which performs dryness operation while discharging inner humid air outside. tableware storage room (2) Temperature sensor (S) which detects temperature until detection temperature turns into dryness cooking temperature -- tableware storage room (2) Temperature up process (L) to which temperature up of the inside is carried out It performs after this and is the above-mentioned temperature sensor (S). Temperature maintenance process (N) which maintains detection temperature at the above-mentioned dryness cooking temperature while carrying out sequential execution The above-mentioned temperature up process (L) When the dryness accumulation time measured from the time of a start turns into a dryness setup time defined beforehand, it is a temperature maintenance process (N). It is made to make it end. Furthermore, when making dryness operation interrupt and resume, it is discontinuation / resumption signal generator to a warm air feed unit (8). In tableware dryness method" to which made it make the signal receive and this is made ON-OFF [a signal] output Even when interrupting dryness operation temporarily, they are food utensils (M). (M) Let it be the technical problem to keep the shortage of dryness from arising.

[Invention of Claim 1] Invention of Claim 1 is a temperature up process (L). Food utensils (M) when the above-mentioned dryness operation is interrupted temporarily (M) ~~Let it be~~ the technical problem to prevent the shortage of dryness.

[0009]

[Technical Means] [the technical means of invention of Claim 1 devised in order to solve the above-mentioned technical problem] When a discontinuation signal is outputted from discontinuation / resumption signal generator during execution of "temperature up process (L), the detection temperature of a temperature sensor (S) is judged. " which remeasured dryness accumulation time anew since discontinuation / resumption signal generator outputted the resumption signal of dryness when this detection temperature was lower than the reference temperature set below to dryness cooking temperature -- they are things.

[0010]

[Function] The above-mentioned technical means act as follows. If dryness operation starts, Measurement Division operation of dryness accumulation time will start, and the inside of a tableware storage room (2) will begin to carry out temperature up. and This temperature up process (L) It is [be / it / under setting] a tableware storage room (2). by the time inside becomes reference temperature (set up lower than the dryness cooking temperature in a temperature maintenance process (N)) (when it carries out [that an opening-and-closing door (3) is opened wide etc. and] and the forcible discontinuation of the warm air feed unit (8) is carried out) when a discontinuation signal is outputted from discontinuation / resumption signal generator When dryness ~~accumulation~~ time is anew remeasured since it waited to output the resumption signal of dryness from discontinuation / resumption signal generator and this signal was outputted, and this time turns into a dryness setup time defined beforehand, it is a warm air feed unit (8). It stops and dryness operation is terminated. Namely, temperature up process (L) After starting, it is a tableware storage room (2). until inside carries out temperature up to reference temperature Tableware storage room (2) Since an inner temperature was judged to have not carried out ~~temperature~~ up to a temperature effective in dryness operation, we decided not to measure ~~the operating time~~ before dryness discontinuation as dryness accumulation time in this case.

[0011]

[Effect] Invention of Claim 1 has the following characteristic effect. Temperature up process (L) It sets and is a tableware storage room (2). By the time the degree of internal temperature carries out temperature up to reference temperature, it is an opening-and-closing door (3).

when it carries out [being opened wide etc. and] and dryness operation is interrupted temporarily Food utensils (M) (M) Temperature up process (L) which hardly contributes to dryness Operating time is disregarded. Since dryness accumulation time was anew remeasured from the time of dryness operation being resumed, it is a tableware storage room (2) by opening of an opening-and-closing door. Even if inside carries out a temperature fall, they are food utensils (M). (M) It can be made to dry certainly.
[Invention of Claim 2] This invention of Claim 2 is a tableware storage room (2). The above-mentioned reference temperature is exceeded and it is a temperature ~~maintenance~~ process (N). Even if this dryness operation is interrupted temporarily after shifting to a side, they are food utensils (M). (M) Let it be the technical problem to make it make it dry proper.
[0012]
[Technical Means] [the technical means of invention of Claim 2 devised in order to solve the above-mentioned technical problem] When a discontinuation signal is outputted from discontinuation / resumption signal generator during execution of "temperature maintenance process (N) It supervises that the resumption signal of dryness is outputted from this discontinuation / resumption signal generator. When this resumption signal of dryness occurs, it is a temperature sensor (S). It supervises that detection temperature carries out temperature up more than reference temperature. When the add time of dryness accumulation time until dryness accumulation time and the above-mentioned discontinuation signal after this temperature becomes more than reference temperature are outputted is in agreement at a dryness setup time, it is a temperature maintenance process (N)." it was made to terminate They are things.
[0013]
[Function and Effect] The above-mentioned technical means have the following operation and effect. Temperature maintenance process (N) When it sets and a discontinuation signal is outputted from discontinuation / resumption ~~signal generator~~, it supervises that the resumption signal of dryness is outputted from discontinuation / resumption signal generator (when it carries out [that an opening-and-closing door (3) is opened wide etc. and] and the forcible discontinuation of the warm air feed unit (8) is carried out). And when this ~~resumption signal~~ of dryness occurs, it is a temperature sensor (S) further after that. Tableware storage room (2) to detect An inner temperature is supervised. That is, while the above-mentioned dryness operation is interrupted temporarily, it is ~~an opening-and-closing door (3)~~. It is opened wide and they are food utensils (M). (M) It is a tableware storage room (2) to the grade which must have been dried effectively. It is judged wh~~ether~~ it has got cold. And tableware storage room (2) When inside has got cold, it is a temperature sensor (S). It stands by until detection temperature becomes more than reference temperature (dryness cooking temperature predetermined temperature temperature set up low). Temperature sensor (S) When detection

temperature turns into reference temperature, dryness operation is performed until the sum of the dryness accumulation time before discontinuation is in agreement the dryness accumulation time measured after that and temporarily [previous statement] at a dryness setup time.

[0014] On the other hand, when the resumption signal of dryness comes out from discontinuation / resumption signal generator, it is a tableware storage room (2). when not having got cold below in reference temperature temperature sensor (S) which shows this state from -- dryness operation is continued until the sum of a temperature signal of the dryness accumulation time before discontinuation corresponds the resumption signal of dryness simultaneously the time which accumulated the time of dryness operation which will be outputted and is performed from immediately after this resumption operation of dryness, and temporarily [previous statement] at a dryness setup time.

[0015] Thus, according to the above-mentioned technical means, it is a temperature maintenance process (N). when interrupted dryness operation is resumed after shifting The above-mentioned discontinuation time to tableware storage room (2) Since it does not measure as dryness accumulation time until inside carries out temperature up to reference temperature (food utensils (M) temperature effective in dryness of (M)), they are food utensils (M). (M) It does not lapse into a dryness insufficient state.

[0016]

[Working example] Next, the above-mentioned example of the invention in this application is explained. The internal structure of the dish washer is constituted like the thing of drawing 1 mentioned already, and it is the counter (W) of a built in kitchen unit at the thing of this figure. Accommodation installation is carried out in lower part space. Moreover, above a water tank (23), it is the nozzle arm (6) of two steps of upper and lower sides. (6) Lacq (4) arranged in these upper parts free [a drawer] according to each (4) It is prepared. Furthermore, a water level sensor (78) and a drain pump (75) are arranged by the pipe for water level detection (71) and drainage pipe (72) which were pulled out from the bottom of the water tank (23), and it is a tableware storage room (2). In the connected water supply pipe (25), it is a water supply valve (V). It is arranged.

[0017] It is a casing (1) as shown in drawing 2 . In the upper part of the front, it is a tableware storage room (2). The exhaust port (52) which discharges inner humid air, and tableware storage room (2) Air supply opening (830) for attracting the air supplied inside The control unit (59) is formed further. These electrical components are the control circuits (7) like drawing 3 where the microcomputer was incorporated while the driving switch (54) and the display lamp (55) were arranged in the above-mentioned control unit (59). It connects. namely, control circuit (7) **** -- the above-mentioned driving switch (54) and a display lamp (55) -- Opening-and-closing door (3) Door detection switch (K) which detects opening and closing Tableware storage room (2) Temperature sensor (S) which detects the degree of internal temperature Tableware storage room (2) Warm air feed unit (8) which generates the warm air to supply A component-parts slack fan (80) and the ~~heater for dryness~~ (84), The water heating ~~heater~~ (20) which heats the water in a ~~water tank (23), [the reservoir water in a water tank (23)] Nozzle~~ arm (6) (6) Pump (P) to supply Tableware storage room (2) Water supply valve (V) which supplies water The drain pump (75) which drains the rinse ~~water in a water~~ tank ~~(23), the water~~ level sensor (78) which detects the water level in this ~~water tank (23), etc. are connected. In~~ addition, at this example, it is the switch (K) of the above-mentioned single. ~~Although~~ discontinuation / resumption signal generator ~~given in~~ the clause of ~~previous~~ statement technical means is supported, ~~you may make it~~ generate a resumption signal from this switch by forming the independent switch which carries out manual operation.

[0018] The above-mentioned control circuit (7) In the incorporated microcomputer, the control program of the contents shown by the flow chart of drawing 4 is stored, and the control action of the dish washer in this example is hereafter explained according to this figure. First, Lacq (4) (4) Food utensils (M) (M) After storing, detergent is fed into a water tank (23), and it is an opening-and-closing door (3). It closes and, thereby, preparation is made to complete.

[0019] next -- if a driving switch (54) is thrown in -- this -- step (100) operation which it is checked and is performed now -- washing operation -- or the process judging flag (F0) for judging rinse operation is set to "0 (value which shows that it is washing operation)" (step (101)). And step (102) It performs and is a tableware storage room (2). Water supply valve (V) inserted in the connected water supply pipe (25) It opens.

[0020] Step (103) When at least the water tank (23) inland sea which a water level sensor (78) detects is judged and this becomes a predetermined water level, it is a water supply valve (V). The valve is made to close and it is a pump (P). While carrying out ON operation, a water heating heater (20) is made to generate heat. Then, the rinse water of a water tank (23) is a water flow way (F). Pump (P) It is drawn in and this is a nozzle arm (6). (6) It blows off from a nozzle (60) and (60), and is this nozzle arm (6). (6) It begins to rotate and, thereby, they are food utensils (M). (M) Washing operation begins.

[0021] Next, step (104) After it performs and only a definite period of time performs the above-mentioned washing operation, Pump (P) While stopping, operate a drain pump (75) and the rinse water in a water tank (23) is made to drain (refer to step (105)). then, operation performed [above-mentioned] -- washing operation -- or [the process judging flag (F0) for judging rinse operation / judge and (refer to step (106))] the case where this process judging flag (F0) is judged that it is "0" and washing operation was performed -- step (107) setting a process judging flag (F0) to "1 (value which shows rinse operation)" -- above-mentioned (102) - (106) A step is performed again. and step (106) if it can check that operation which this process judging flag (F0) is "1", and was performed immediately before as a result of judging the contents of the process judging flag (F0) is rinse operation -- a control action -- step (110) It shifts to the following drying stages.

[0022] a drying stage is shown in (**) of drawing 5 -- as -- tableware storage room (2) inside -- dryness -- cooking temperature -- temperature up process (L) which carries out temperature up to 60 degrees C of abbreviation performing after this -- and tableware storage room (2) Temperature maintenance process (N) of maintaining inside to the above-mentioned dryness cooking temperature from -- it is constituted. and temperature up process (L) Temperature maintenance process (N) while performing -- opening-and-closing door (3) being opened wide -- door detection switch (K) from -- if a discontinuation signal is outputted, it changes so that the control action like (b) of this figure - (d) may be performed. that is, Tableware storage room (2) by the time inside carries out temperature up to 50 degrees C of reference temperature slack lower than the above-mentioned dryness cooking temperature when dryness operation is interrupted, it is shown in (**) (when an opening-and-closing door (3) is wide opened in this example) -- as -- door detection switch (K) from -- the resumption of dryness -- a signal -- the dryness accumulation time (dryness execution time) out of which ON signal even comes is disregarded. moreover, tableware storage room (2) the case where dryness discontinuation operation is carried out after an inner temperature exceeded reference temperature (50 degrees C) -- (Ha) and (**) -- like -- a case -- dividing -- carrying out -- henceforth -- a control action -- performing -- having -- thereby -- food utensils (M) (M) It has prevented that the shortage of dryness arises.

[0023] It is the step (110) of drawing 4 about the control action for realizing hereafter operation shown in the graph of drawing 5 . It explains in full detail, explaining the following. If a control process shifts to a drying stage, it is a step (110) first. A fan (80) and the heater for dryness (84) are changed into ON state, and it is a warm air feed unit (8). It is made to operate. Moreover, dryness Ross time (A) taken into consideration in order to prevent the shortage of dryness at the time of being made for dryness operation to be interrupted The inside of the memory to memorize is set to "0." Furthermore, while resetting a dryness operation continuation timer (T1), the inside of the memory which memorizes auxiliary time (T3) is set to "0."

[0024] When the heater for dryness (84) operates with the above-mentioned fan (80), the generating heat of the heater for dryness (84) is an air supply way (83) to a tableware storage room (2) at a fan (80). It is supplied inside and the temperature in this tableware storage room (2) begins to rise. And temperature sensor (S) Tableware storage room (2) to detect It is a step (111) whether an inner temperature carried out temperature up to 50 degrees C of reference temperature slack. It is judged. This tableware storage room (2) when an inner temperature is below the above-mentioned reference temperature (50 degrees C) door detection switch (K) from -- a ****** [that a discontinuation signal (signal which shows that the opening-and-closing door (3) was opened wide) is outputted] -- step (112) if it supervises continuously and this discontinuation signal is outputted step (113) stopping a fan (80) and the heater for dryness (84) -- door detection switch (K) from -- it supervises that the resumption signal of dryness (signal which shows that the opening-and-closing door (3) was closed) is outputted. and door detection switch (K) from -- if it can check that the resumption signal of dryness has been outputted -- a control action -- step (110) While being returned and operating again a fan (80) and the heater for dryness (84), operation which resets a dryness operation continuation timer (T1) is performed. then, this dryness operation continuation timer (T1) -- opening-and-closing door (3) being closed -- door detection switch (K) from -- [the time after the resumption signal of dryness comes out / it changes with remeasuring anew and] It is (c) at the time of resumption of the drawing 5 (**) dryness. It is used for judgment of termination of dryness of the time which the dryness operation continuation timer (T1) measured henceforth. And at this example, it is a tableware storage room (2). By the time inside carried out temperature up to reference temperature, when a dryness discontinuation signal comes out, it is (c) at the time of resumption of dryness. The control which measures future dryness accumulation time supports invention of Claim 1.

[0025] In addition, after shifting [this example] to a drying stage, even if 18 minutes pass, it is a tableware storage room (2). This state is a step (115) when an inner temperature does not carry out temperature up to 50 degrees C of reference temperature slack. It is judged and error handling, such as sounding **** alarm, is carried out. Next, step (111) Tableware storage room (2) if it can check that an inner temperature has carried out temperature up to the above-mentioned reference temperature It is [the predetermined temperature width top set to the center in 60 degrees C and 62 degrees C of minimum temperature slack, and] a tableware storage room (2) among 58 degrees C (it corresponds to "dryness cooking temperature" given in the clause of previous statement technical means). It is a step (120) whether an inner temperature is maintained. It is judged. and step (116) Tableware storage room (2) when it is checked that an inner temperature is 62 degrees C or less, after setting a heating execution flag (F1) to "1" -- step (118) A control action is moved. moreover, step (121) Tableware storage room (2) when it is checked that an inner temperature is 58 degrees C or more, after setting the above-mentioned heating execution flag (F1) to "0" -- step (118) A control action is moved.

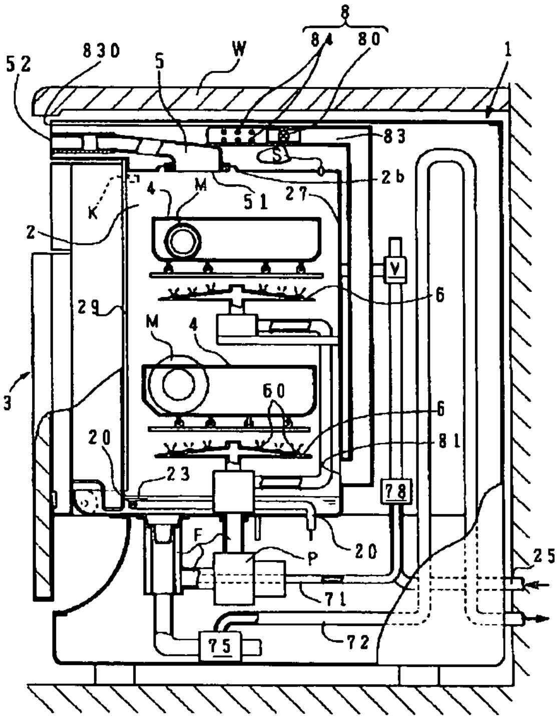
[0026] Step (118) It is a door detection switch (K) then. when it is judged whether the dryness discontinuation signal is taken out and the dryness discontinuation signal has not come out The Measurement Division time and dryness Ross time (A) of a dryness operation continuation timer (T1) It is a step (119) about a difference becoming more than dryness setup time slack 20 minute. It supervises. And the Measurement Division time and dryness Ross time (A) of the above-mentioned dryness operation continuation timer (T1) if a difference becomes the above-mentioned dryness setup time Step (190) A fan (80) is made into an OFF state, when the contents of the heating execution flag (F1) are judged and it is judged that the heater for dryness (84) has already stopped from the contents of this heating execution flag (F1). On the other hand, when [both] it is judged that the heater for dryness (84) is operating from the contents of the above-mentioned heating execution flag (F1), this and a fan (80) are made into an OFF state, and dryness operation is terminated. And step (100) which supervises an injection of a driving switch (54) after that A control action will be returned to an initial process. in addition, dryness operation -- temperature maintenance process (N) after shifting -- door detection switch (K) from -- when a dryness discontinuation signal is not outputted at all the contents of the above-mentioned dryness Ross time (A) -- step (110) since it does not change from the state of set "0" -- step (119) **** -- the Measurement Division time of a dryness operation continuation timer (T1) -- dryness -- a setup time -- if it judges substantially whether it became in 20 minutes -- things -- ** therefore, temperature up process (L) which was already performed in this case the time of setting and dryness operation not being interrupted -- (**) of drawing 5 -- like -- the early stages of a dryness start -- (a) from -- dryness operation is completed when 20 minutes pass. on the other hand, temperature up process (L) the case where discontinuation is carried out for dryness operation -- the time of resumption of dryness -- (c) from -- dryness operation will be ended when 20 minutes pass.

[0027] In addition, the Measurement Division time and dryness Ross time (A) of a dryness operation continuation timer (T1) when the difference has not reached at a dryness setup time The contents of the heating execution flag (F1) are judged at a step (119a), the contents of this heating execution flag (F1) are embraced, and it is a step (120). A control action is returned to a given place and, thereby, it is a tableware storage room (2). Temperature adjustment is carried out so that it may be maintained by the range whose inner temperature is 58 degrees C - 62 degrees C.

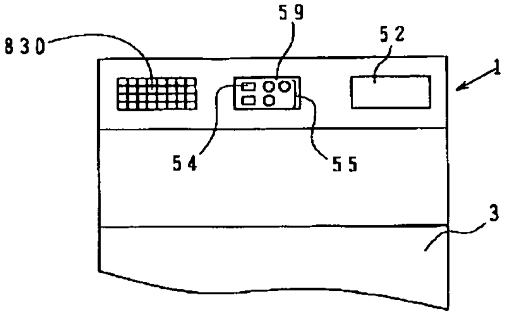
[0028] next, tableware storage room (2) an inner temperature -- reference temperature -- exceeding 50 degrees C -- temperature maintenance process (N) after shifting to a side -- door detection switch (K) from -- a control action when a dryness discontinuation signal is outputted is explained. in this case, door detection switch (K) from -- the dryness discontinuation signal came out -- step (118) being checked -- step (130) The following control actions are performed.

[0029] step (130) **** -- a dryness discontinuation timer (T2) is reset -- a fan (80) and the heater for dryness (84) are both made into an OFF state. and door detection switch (K) from -- [when the resumption signal of dryness is outputted, change again a fan (80) and the heater for dryness (84) into ON state, and dryness operation is made to resume, and] At this time, it is a temperature sensor (S). Tableware storage room (2) to detect When the degree of internal temperature has not carried out a temperature fall at 50 degrees C or less (when the tableware storage room (2) becomes a temperature effective in dryness of food utensils (M) (M)), it is a step (132) about this state. It judges. And step (136) Dryness Ross time (A) The Measurement Division time of ~~a dryness discontinuation timer (T2) is added, and it is an after that and~~ tableware storage room (2). Step (120) for maintaining an inner temperature within the limits of 58 degrees C - 62 degrees C A control action is returned.

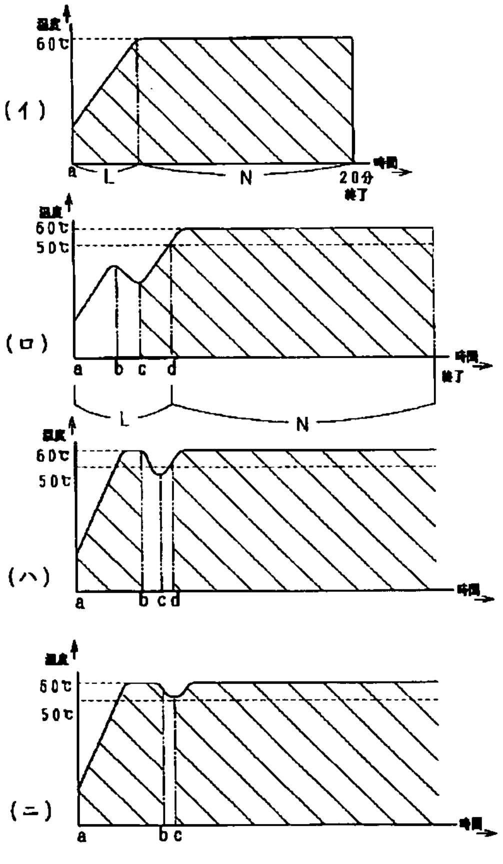
【図1】


52
830
W
8
84
80
1
5
83
S
2b
51
27
K
4
M
2
V
6
29
M
4
60
3
6
81
20
23
78
25
F
P
20
71
72
75

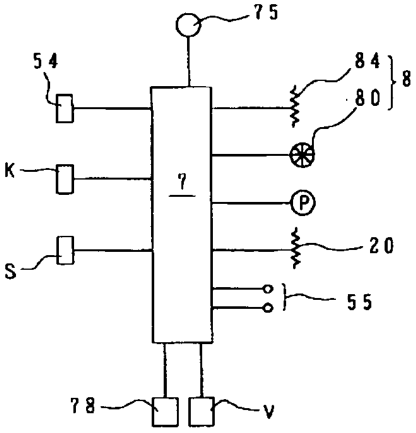
【図2】


830
59
52
1
54
55
3

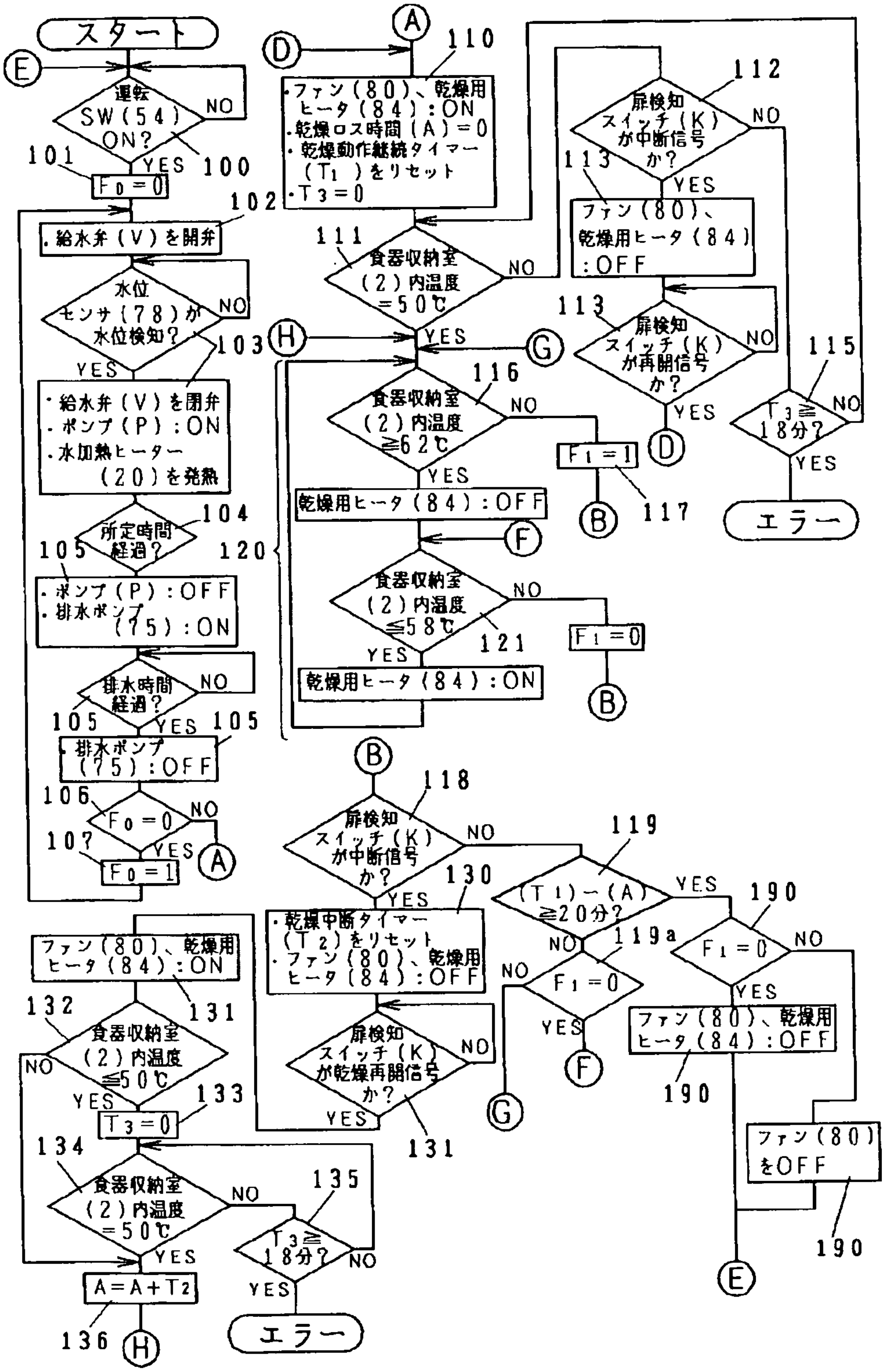
【図5】

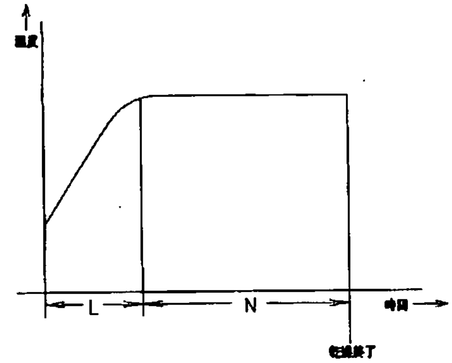

温度
60℃
(イ)
a
L
N
20分
終了
時間
温度
60℃
50℃
(ロ)
a
b
c
d
終了
時間
L
N
温度
60℃
50℃
(ハ)
a
b
c
d
時間
温度
60℃
50℃
(ニ)
a
b
c
時間

【図3】


75
54
84
8
80
K
7
P
S
20
55
78
V

【図4】


スタート
E
運転
SW（54）
ON？
NO
YES
100
101
F₀＝0
102
・給水弁（V）を開弁
水位
センサ（78）が
水位検知？
NO
YES
103
・給水弁（V）を閉弁
・ポンプ（P）：ON
・水加熱ヒーター
（20）を発熱
104
所定時間
経過？
105
・ポンプ（P）：OFF
・排水ポンプ
（75）：ON
排水時間
経過？
NO
105
YES
105
排水ポンプ
（75）：OFF
106
F₀＝0
NO
107
YES
A
F₀＝1
A
D
110
・ファン（80）、乾燥用
ヒータ（84）：ON
・乾燥ロス時間（A）＝0
・乾燥動作継続タイマー
（T₁）をリセット
・T₃＝0
111
食器収納室
（2）内温度
＝50℃
NO
H
YES
G
116
食器収納室
（2）内温度
≧62℃
NO
F₁＝1
B
117
YES
乾燥用ヒータ（84）：OFF
F
120
食器収納室
（2）内温度
≦58℃
NO
121
F₁＝0
B
YES
乾燥用ヒータ（84）：ON
112
扉検知
スイッチ（K）
が中断信号
か？
NO
113
YES
ファン（80）、
乾燥用ヒータ（84）
：OFF
113
扉検知
スイッチ（K）
が再開信号
か？
NO
YES
D
115
T₃≧
18分？
NO
YES
エラー
B
118
扉検知
スイッチ（K）
が中断信号
か？
NO
YES
130
・乾燥中断タイマー
（T₂）をリセット
・ファン（80）、乾燥用
ヒータ（84）：OFF
扉検知
スイッチ（K）
が乾燥再開信号
か？
NO
YES
131
119
（T₁）－（A）
≧20分？
YES
NO
119a
NO
F₁＝0
YES
F
G
190
F₁＝0
NO
YES
ファン（80）、乾燥用
ヒータ（84）：OFF
190
ファン（80）
をOFF
190
E
ファン（80）、乾燥用
ヒータ（84）：ON
131
132
食器収納室
（2）内温度
≦50℃
NO
YES
133
T₃＝0
134
食器収納室
（2）内温度
＝50℃
NO
135
T₃≧
18分？
NO
YES
エラー
YES
A＝A＋T₂
136
H

【図6】